



DEPARTMENT OF ENVIRONMENTAL QUALITY

KATHLEEN BABINEAUX BLANCO

GOVERNOR

MIKE D. McDANIEL, Ph.D.

SECRETARY

Certified Mail No.

Agency Interest No. 1272
Activity No.: PER20050002

Mr. Greg Knight
Vice President
Big River Industries, Inc.
PO Box 66377
Baton Rouge, LA 70896-6377

RE: Prevention of Significant Deterioration (PSD) Permit, PSD-LA-713, Gravelite Division
Big River Industries Inc, Erwinville, Pointe Coupee Parish, Louisiana

Enclosed is your permit, PSD-LA-713. Implementation of the proposed project is not allowed until such time as the corresponding operating permit is issued.

Should you have any questions concerning the permit, contact Hassan Ghosn at 225-219-3113.

Chuck Carr Brown, Ph.D.
Assistant Secretary

Date

CCB: AHG
c: EPA Region VI

ENVIRONMENTAL SERVICES

: PO BOX 4313, BATON ROUGE, LA 70821-4313

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WWW.DEQ.LOUISIANA.GOV

PSD-LA-713
Agency Interest No.: 1272

**AUTHORIZATION TO CONSTRUCT AND OPERATE A MODIFIED MAJOR SOURCE
PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION
REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE,
LAC 33:III.509**

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Big River Industries, Inc.
Gravelite Division
P. O. Box 66377
Baton Rouge, LA 70896-6637

is authorized to implement the Feed Increase and Flexibility Project at the Big River Industries' Gravelite Division Plant near

Erwinville
Pointe Coupee Parish, Louisiana

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

This permit and authorization to construct shall expire at midnight on _____, 2007, unless physical on site construction has begun by such date, or binding agreements or contractual obligations to undertake a program of construction of the source are entered into by such date.

Signed this _____ day of _____, 2006.

Chuck Carr Brown, Ph.D.
Assistant Secretary
Office of Environmental Services

BRIEFING SHEET

**Gravelite Division
Agency Interest No.: 1272
Big River Industries, Inc.
Erwinville, Pointe Coupee Parish, Louisiana**

PURPOSE

Big River Industries, Inc. (Big River) proposes to implement a Feed Increase and Flexibility Project which mainly consists of increasing the clay feed rates to each of its rotary kilns from 18 tons/hr to 22 tons/hr, increasing the annual operating hours of each kiln and associated systems from 7896 hours to 8760 hours, and firing the rotary kilns using coal/petroleum coke mixtures of up to 50% by weight petroleum coke.

RECOMMENDATION

Approval of the proposed project (changes) and issuance of a permit.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division.

PROJECT DESCRIPTION

Big River owns and operates Gravelite Division, an existing lightweight, low density aggregate facility located in Erwinville, Pointe Coupee Parish, Louisiana. The Gravelite Division produces lightweight or expanded aggregate material for use in products such as concrete blocks, lightweight concrete, and asphalt overlay. The operation involves feeding clay (mined on site) through one of four rotary kilns to produce an expanded lightweight gravel-size aggregate. The kilns are currently fired with coal (maximum of 1.5 % sulfur content) as the primary fuel and natural gas as support fuel typically used for kiln startup.

Big River proposes to increase the production of light aggregates and lower the associated cost. The Feed Increase and Flexibility Project will be implemented in two phases: Phase I and Phase II; the latter will be the normal operating condition of the plant.

Phase I

1. Increase the production rate from 18 to 22 tons of clay per hour per kiln.
2. Increase the annual operating hours for the kilns and associated systems from 7,896 to 8,760 hours.

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Phase II

3. Fire the kilns with coal/petroleum coke fuel mixtures containing up to 50% petroleum coke. The sulfur content by weight of the coal and petroleum coke shall not exceed 1.5% and 5.0%, respectively.
4. Retrofit the existing wet scrubbers (EPN 001, EPN 002, EPN 003, and EPN 004) to achieve a minimum SO₂ removal efficiency of 93.0%.

The estimated future potential PM₁₀, NO_x, CO, and VOC emissions are the same for both phases. However, the estimated future potential SO₂ emissions during Phase I will be limited by means of a (CAP) federally enforceable condition to the estimated future potential SO₂ emissions of Phase II. During Phase I, the lime slurry scrubber SO₂ removal efficiency is 80%; this removal efficiency will increase to 93% as a result of retrofitting the scrubbers during Phase II.

Estimated emissions increases from the Project, in tons per year, are as follows:

<u>Pollutant</u>	<u>Project-Related Increase (tpy)</u>	<u>Contemporaneous Decreases/Increases</u>	<u>PSD De Minimis</u>	<u>PSD Review Required?</u>
PM ₁₀	33.40**	*	15	Yes
SO ₂	38.08**	*	40	No
NO _x	756.10**	*	40	Yes
CO	43.30**	*	100	No
VOC	11.50	*	40	No

* Does not include any contemporaneous decrease/increases.

** Past actual emissions exceed permitted emission rates as a result of a change in estimation methodology. For PSD purposes, pollutant emissions increases are obtained by subtracting the currently permitted emission limit (the lower of the permitted and actual) from the proposed emission rate.

The facility, Big River Industries, Inc – Gravelite Division Plant, is an existing major source under the Prevention of Significant Deterioration (PSD) rules. The net increases in PM₁₀ and NO_x emissions are above the corresponding PSD significance levels, and thus the project must undergo a complete PSD analysis for each of these two pollutants.

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Big River Industries, Inc.
Erwinville, Pointe Coupee Parish, Louisiana**

TYPE OF REVIEW

The requested permit was reviewed in accordance with PSD regulations for PM₁₀ and NO_x emissions. The selection of control technology based on the Best Available Control Technology (BACT).

BEST AVAILABLE CONTROL TECHNOLOGY

PM₁₀ and NO_x emissions are above the significance levels and therefore must undergo PSD reviews.

Based on the "top down" analysis approach, it was concluded that the existing good combustion and maintenance practices and the venturi wet scrubber are the Best Available Control Technologies for NO_x and PM₁₀ emissions, respectively. Also, the existing coolers multi-clones and the measures to suppress the fugitive PM₁₀ emissions through water sprays, partial enclosures, watering and limiting truck traffic speed to a lower limit constitute the corresponding Best Available Control Technology (BACT).

AIR QUALITY IMPACT ANALYSIS

Prevention of Significant Deterioration (PSD) regulations requires an analysis of existing air quality for those pollutants emitted in significant amounts from a proposed major modification.

The Gravelite modification will likely have little additional impacts to surrounding areas. Screening dispersion modeling indicated that the PM₁₀ and NO_x maximum ground level concentrations exceed the corresponding significant impact levels. Further analyses were completed, including the increment assessment and a demonstration of compliance with the NAAQS using an off-site inventory of emission sources together with representative background concentrations. The results, while significant, demonstrate compliance with the NAAQS and increment levels for the two modeled pollutants. Therefore, the emissions from the plant will continue to have little impact on local air quality.

ADDITIONAL IMPACTS

Impact on commercial growth in the surrounding area due to the Feed Increase and Flexibility Project will be negligible since the project will not involve any major construction activities and will only involve retrofit for the lime slurry scrubbers. Current staff will be sufficient for post-project operations, and no new permanent jobs will be created; therefore, there will be no impact on residential growth associated with the modification.

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Changes in visibility impacts based on the project will likely be minimal to the surrounding area, with continued visible steam from aggregate drying as the major "noticeable" evidence of visual plant activity. Soils, vegetation, and visibility will not be adversely impacted by the proposed project. The nearest Class I area is too remote to be affected by this project. Hence, the planned modification will have little impact on the surrounding areas.

PROCESSING TIME

Application Dated:	July 12, 2005
Application Received:	July 13, 2005
Additional Information Dated:	February 01, 2006
	February 16, 2006
	March 20, 2006
	April 03, 2006
	April 19, 2006
	April 21, 2006
	April 24, 2006
	April 26, 2006
Effective Completeness:	May 01, 2006

PUBLIC NOTICE

A notice requesting public comment on the permit was published in *The Advocate*, Baton Rouge, on XXXXXXXX, XX, 2006; and in the XX, on XXXXXXXX, XX, 2006. A copy of the public notice was mailed to concerned citizens listed in the Office of Environmental Services Public Notice Mailing List on XXXXXXXX, XX, 2006. The draft permit was also submitted to US EPA Region VI on XXXXXXXX, XX, 2006. Comments will be addressed and acted upon before issuance of the permit.

PRELIMINARY DETERMINATION SUMMARY

**Gravelite Division
Agency Interest No.: 1272
Big River Industries, Inc.
Erwinville, Pointe Coupee Parish, Louisiana**

May 01, 2006

I. APPLICANT

Big River Industries, Inc.
Gravelite Division
P. O. Box 66377
Baton Rouge, LA 708966637

II. LOCATION

Big River Industries - Gravelite Division is located at 12652 Highway 190 West in Erwinville, Louisiana. Approximate UTM coordinates are 651.7 kilometers East and 3,379.10 kilometers North, Zone 15.

III. PROJECT DESCRIPTION

Big River proposes to undertake a Feed Increase and Flexibility Project at its Gravelite Division plant. The purpose of the project is to increase the production of light aggregates, increase operating hours, and fire the rotary kilns with coal/petroleum coke mixtures to lower the associated cost. The Feed Increase and Flexibility Project will be implemented in two phases: Phase I and Phase II; the latter will be the normal operating condition of the plant. The plant's permitted emissions during both phases will be limited to the same criteria pollutants limits.

Phase I

1. Increase the production rate from 18 to 22 tons of clay per hour per kiln.
2. Increase the annual operating hours for the kilns and associated systems from 7,896 to 8,760 hours.

Phase II

3. Fire the kilns with coal/petroleum coke fuel mixtures containing up to 50% petroleum coke. The sulfur content by weight of the coal and petroleum coke shall not exceed 1.5% and 5.0%, respectively.

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4. Retrofit the existing wet scrubbers (EPN 001, EPN 002, EPN 003, and EPN 004) to achieve a minimum SO₂ removal efficiency of 93.0%.

The estimated future potential PM₁₀, NO_x, CO, and VOC emissions are the same for both phases. However, the estimated future potential SO₂ emissions during Phase I will be limited by means of a (CAP) federally enforceable condition to the estimated future potential SO₂ emissions of Phase II. During Phase I, the lime slurry scrubber SO₂ removal efficiency is 80%; this removal efficiency will increase to 93% as a result of retrofitting the scrubbers during Phase II.

Estimated emissions increases from the Project, in tons per year, are as follows:

Pollutant	Project-Related Increase (tpy)	Contemporaneous Decreases/Increases	PSD De Minimis	PSD Review Required?
PM ₁₀	33.40**	*	15	Yes
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** Past actual emissions exceed permitted emission rates as a result of a change in estimation methodology. For PSD purposes, pollutant emissions increases are obtained by subtracting the currently permitted emission limit (the lower of the permitted and actual) from the proposed emission rate.

The facility, Big River Industries, Inc – Gravelite Division Plant, is an existing major source under the Prevention of Significant Deterioration (PSD) rules. The net increases in PM₁₀ and NO_x emissions are above the corresponding PSD significance levels, and thus the project must undergo a complete PSD analysis for each of these two pollutants.

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IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for modified major sources requires review under PSD regulations, LAC 33:III.509. PSD permit reviews of proposed new or modified major stationary sources require the following analyses:

- A. A determination of the Best Available Control Technology (BACT);
- B. Analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;
- C. *An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);*
- D. An analysis of the PSD increment consumption;
- E. An analysis of the source related growth impacts;
- F. *An analysis of source related impacts on soils, vegetation, and visibility;*
- G. A Class I Area impact analysis; and
- H. An analysis of the impact of toxic compound emissions.

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A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a modified major source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes.

Big River proposes to implement a Feed Increase and Flexibility Project which will increase the feed rate for its four clay kilns, increase the operating hours, and allow the kilns to burn coal/petroleum coke mixtures limited to a maximum sulfur content of 3.25% by weight. The project is intended to lower overall production cost to allow continued operation of the plant. The facility is already a major source under PSD rules. Furthermore, the projected net PM₁₀ and NO_x emissions increases (33.40 and 756.10 tpy) from the proposed project will be above the corresponding PSD de minimis levels (15 and 40 tpy). The four clay rotary kilns, Emission Points EPN 001, EPN 002, EPN 003, and EPN 004, are the only emitters of NO_x at the Gravelite plant. Emitters of PM₁₀ include the kilns, Emission Points EPN 001, EPN 002, EPN 003, and EPN 004; the coolers, Emission Points, EPN 005a, EPN 006a, EPN 007a, and EPN 008a; and conveyor transfer/truck load-out stations, stockpiles, unpaved roads, and product handling, Emission Points EPN 009, EPN 010, EPN 011, EPN 012, EPN 013, EPN 015, EPN 016, EPN 017a, EPN 017b, EPN 018, EPN 002, and EPN 023. A BACT analysis is required for these two PSD regulated pollutants.

BACT for (Rotary Clay Kiln) analysis for NO_x

Successful reduction in NO_x emissions requires identification of the sources of NO_x formation. Nitrogen oxides (NO_x) emissions during the combustion process are

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attributed to two main sources: thermal and fuel-bound NO_x . The former is formed by dissociation of the nitrogen in combustion air and its subsequent reaction with the available oxygen. The latter is formed by the gas-phase oxidation of the elemental nitrogen contained in the fuel. Thermal NO_x formation is influenced by three parameters: peak combustion temperature, residence time, and availability of oxygen. The temperature influence is the strongest among these three parameters (the dissociation reaction rate increases exponentially with temperatures).

Fuel-bound NO_x formation is a function of the nitrogen content and the amount of available oxygen in the combustion chamber. Generally, natural gas and solid fuels have negligible chemically-bound nitrogen with very little elemental nitrogen present. Therefore, the fuel-bound NO_x from natural gas and solid fuels combustion is negligible.

Strategies for reducing NO_x emissions fall into one of two categories. Combustion modifications limit the amount of thermal NO_x formed during the combustion process. Post-combustion controls (flue gas treatment) applied downstream chemically transform the NO_x formed during combustion back to elemental nitrogen.

Combustion modifications are used primarily to reduce the amount of NO_x formed during combustion, but in some cases staged combustion may also help limit fuel-bound NO_x formation. This can be achieved by reducing the oxygen concentration at peak temperatures, or reducing the residence time at peak temperatures, or keeping peak temperatures below 2400 °F (no thermal NO_x is formed at temperatures below 1300 °F).

Effective combustion control technologies include low NO_x burners (LNBs), staged combustion, and combustion operational modifications to kiln burner tip modifications.

Use of LNBs involve replacing the kiln's direct-fired burner with one designed to reduce flame turbulence, delay fuel/air mixing, and establish fuel-rich zones (low excess air). Reductions in NO_x formation from 15-30% have been experienced for cement kilns utilizing LNBs. However, the use of LNBs on lightweight aggregate kilns also appears to be incompatible. LNBs achieve lower nitrogen oxide, in part,

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by maintaining 1.5 to 3.0%, by volume, excess oxygen. According to Livlite facility (sister plant in Alabama) personnel and test data, the excess oxygen of the lightweight aggregate process is approximately 12 to 13% at the kiln exit. Furthermore, because the kiln serves as a dryer in addition to a calciner, it is necessary to the operation to preheat and transport excess air to the kiln inlet in order to dry and preheat the clay. By comparison, many cement kiln operations have a separate preheating operation to dry and heat the raw material before it enters the kiln. However, in the lightweight aggregate operation, this step is conducted in the first 30 to 50 feet of the kiln. To decrease the air flow into the kiln would leave the moisture content of clay too high in the calcining zone of the kiln to achieve proper expansion and quality of product. Because high air flow is intrinsic to the process, it is expected that LNBs would be ineffective at reducing NO_x. In addition, manufacturing lightweight aggregate requires that a specific temperature profile be maintained throughout the kiln to expand the clay and prevent fusion of the expanded clay in the burning zone. The temperature of the material at the calcining zone must be 2,000-2,100° F. According to facility personnel, increasing or decreasing this temperature by more than 75° F produces unacceptable product quality and/or product fusion (which can lead to complete blockage of the kiln). Therefore, since lowering excess air is expected to negatively impact lightweight aggregate product quality, the use of LNBs is not considered technically feasible for the production of lightweight aggregate.

Staged combustion limits the amount of oxygen available to react with the nitrogen in the combustion zone where temperature profiles favor thermal NO_x formation. Partial combustion occurs in the first stage and is then completed in subsequent stages. However, staging combustion air in a long dry kiln would require an additional secondary firing mechanism. The impact of adding an additional combustion zone on product quality is unknown. Consequently, this technology is not appropriate for clay kilns

Big River made multiple attempts to modify burners tips, from 2002 to 2004, to lower the NO_x emission rate from their lightweight aggregate Kiln 3 located at the Livlite Division in Livingston, Alabama. Kiln 3 at the Livlite Division is a coal-fired rotary kiln used to produce lightweight aggregate from clay. Information gained from this work can be applied to the Gravelite Division kilns. None of the changes

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produced lightweight aggregate suitable to meet market requirements and were, therefore, determined to be infeasible.

Post-combustion controls can reduce both thermal and fuel-bound NO_x formation.

Selective catalytic reduction (SCR) is the most effective post combustion NO_x control method considered. In this process, a reducing agent is introduced into the flue gas upstream of a catalyst bed, which is maintained at elevated temperature (600°F to 900°F). The potential NO_x reductions are 70-90% from the use of this control technique. However, emissions of ammonia, a Class III Louisiana toxic air pollutant (TAP), associated with this technology are negative side effect (negative environmental impact). Moreover, from a review of clearinghouse resources and available literature, SCR has not been selected as BACT on lightweight aggregate or cement kilns. Most of the available demonstrations are for boiler and turbine applications (utility and large industrial). Since particulate matter may cause fouling problems in the catalyst bed, SCR must be implemented after the multi-cyclones and baghouse. Furthermore, the effective NO_x reduction capability of the SCR technology costs around \$27,000 per ton of NO_x removed (negative economic impact) and assumes a high NO_x concentration (loading) of inlet (flue) gas which is not necessarily true for fuel which contains little elemental nitrogen.

Selective non-catalytic reduction (SNCR) is another post combustion process in which a reagent mixture is injected into the elevated temperature flue gas stream. Using urea solution as reagent (ammonia or urea), the process can reduce the NO_x between 40% and 70%. The temperature range for SNCR performance is 1600°F to 2100°F with a residence time of at least 0.5 seconds. If the temperature window at the point of ammonia or urea injection is too small, incomplete ammonia will "slip" through the system and will be released to the atmosphere (environmental). If the temperature window is too large, these chemicals will be oxidized to form additional NO_x. Moreover, according to EPA literature (*Alternative Control Techniques Document – NO_x Emissions from Cement Manufacturing*), direct continuous injection of the reagent in rotating kilns is not technically feasible. Alternatively, injection of solid ammonium or urea salts is possible on a once-per-rotation basis;

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however, this is predicted to be unsatisfactory due to rapid salt decomposition. Therefore, SNCR is not considered to be applicable for long dry or wet kilns and as such is rejected as BACT for the clay kilns.

BACT analysis for PM₁₀

There are six types of emission sources at the Gravelite plant that emit PM₁₀. These are kilns, coolers, conveyor transfer/truck load-out points/stations, stockpiles, unpaved roads, and product handling. Out of the 52.70 tons/yr of the plant's total PM₁₀ emissions, the major portion of these emissions (46.12 tons, or 87.50% of the plant's total) are generated by the first two: the kilns and the coolers. Furthermore, the remaining emissions (6.58 tpy, or 12.50%) are mainly fugitive in nature and currently controlled by the best available control technologies (water spray, partial enclosures, watering, and lowering speed limit).

Each kiln is currently equipped with a venturi wet scrubber that has a PM₁₀ removal efficiency of 99.6%, as confirmed by a 2004 stack test. The only other available control device with higher PM₁₀ removal efficiency is a baghouse with a removal efficiency of 99.9%. The annual baghouse maintenance labor cost alone is approximately \$18,000, which renders it economically infeasible.

Each cooler is currently equipped with a multi-clone that has a PM₁₀ removal efficiency of 25.0%. The available control technologies identified for PM₁₀ are electrostatic precipitators (ESP) and baghouses with PM₁₀ removal efficiencies of 99.0% and 99.9%, respectively. The existing cooler configuration has a potential to emit of 7.30 tpy. To increase the PM₁₀ removal efficiencies to 99.0% and 99.9%, the corresponding annualized cost per ton is \$24,350/ton and \$26,242, respectively, neither of which is economically feasible.

Based on the above analyses, it is concluded that the existing means of controlling stacks and fugitive PM₁₀ emissions are the best available control technologies. These controls are identified and summarized in the following table:

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EPN	Process Equipment	Pollutant	BACT Control Technology
EPN 001, EPN 002, EPN 003, EPN 004	Rotary Kiln	NO _x	Good combustion and maintenance practices (existing)
EPN 001, EPN 002, EPN 003, EPN 004	Rotary Kiln	PM ₁₀	Scrubber (Venturi section existing 99.6% control efficiency)
EPN 005a, EPN 006a, EPN 007a, EPN 008a	Cooler	PM ₁₀	Multi-clone or cyclone (existing 25.0% efficiency)
EPN 009	Scalping Screen	PM ₁₀	Water spray (existing control with 90.0% efficiency)
EPN 010, EPN 013	Crusher (Primary and No. 1)	PM ₁₀	Water spray (existing control with 90.0% efficiency)
EPN 011, EPN 012, and EPN 018	Screen (North, South, and Double Deck Clean-Up)	PM ₁₀	Water spray (existing control with 90.0% efficiency)
EPN 017a	General Conveyor Systems and Stockpiles	PM ₁₀	Water spray (existing control with 90.0% efficiency)
EPN 017b	Night Stockpile Conveyor System	PM ₁₀	Water spray (existing control with 90.0% efficiency)

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EPN 022	Unpaved Roads	PM ₁₀	Watering/High Moisture Content Soil and Reduced Speed Limit (existing control 95.5% efficiency)
EPN 023	Clinker Crushing and Handling	PM ₁₀	No control (due to minimal emissions)

The results of the "top down" analyses with the corresponding technical, economic, and environmental status are presented in TABLE I.

B. ANALYSIS OF EXISTING AIR QUALITY

PSD regulations require an analysis of existing air quality for those pollutant emissions that increase significantly from a proposed major modification. NO_x and PM₁₀ are pollutants of concern in this case.

Screen dispersion modeling of the NO_x annual average maximum and the PM₁₀ 24-hour and annual average maximum from the proposed project indicates off-site ground level concentrations are 4.3 µg/m³, 28.6 µg/m³, and 3.6(µg/m³, respectively, which exceed the modeling significance impact levels for NO_x (1µg/m³) and PM₁₀ (5 µg/m³ and 1µg/m³). Therefore, further modeling is required and completed as discussed below. The summary is shown in TABLE II.

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

The results of the combined Gravelite and Inventory NAAQS analysis, including background concentrations, show that the NO_x annual average maximum is 58.0 µg/m³, the PM₁₀ 24-hour average maximum is 143.4 µg/m³, and the PM₁₀ annual average maximum is 48.1 µg/m³. These levels are all below the corresponding NAAQS levels for both NO_x (100 µg/m³) and PM₁₀ (150 µg/m³ and 50 µg/m³). Accordingly, these results demonstrate compliance with the corresponding NAAQS levels for the both NO_x and PM₁₀; therefore, the Big River Gravelite Division plant

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emissions will continue to have little impact on local air quality. The summary is shown in Table II.

D. PSD INCREMENT ANALYSIS

The results of the increment modeling are for the NO_x annual average maximum, $4.3 \mu\text{g}/\text{m}^3$, and for the PM_{10} 24-hour and annual average maximum, $26.7 \mu\text{g}/\text{m}^3$ and $5.0 \mu\text{g}/\text{m}^3$, respectively, and are below the corresponding increment levels for both NO_x ($25 \mu\text{g}/\text{m}^3$) and PM_{10} ($30 \mu\text{g}/\text{m}^3$ and $17 \mu\text{g}/\text{m}^3$). Accordingly, these results demonstrate compliance with the corresponding increment levels for both NO_x and PM_{10} ; therefore, the Big River Gravelite Division plant emissions will continue to have little impact on local air quality. The summary is shown in Table II.

E. SOURCE RELATED GROWTH IMPACTS

It is expected that the impact on growth will be negligible, as only a slight increase in the temporary work force will be needed to support the minor construction associated with the proposed project.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

Changes in visibility impacts based on the project will likely be minimal to the surrounding area, with continued visible steam from aggregate drying as the major "noticeable" evidence of visual plant activity. Soils, vegetation, and visibility will not be adversely impacted by the proposed project.

G. CLASS I AREA IMPACTS

Class I areas are too remote to be affected by this project and the site, precluding any significant impact.

H. TOXIC IMPACT

Gravelite Division is a minor source for toxic air pollutants (TAPs). The selection of control technology based on the BACT analysis included consideration of control of

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toxic emissions.

V. CONCLUSION

The Air Permits Division has made a preliminary determination to approve the change of the Feed Increase and Flexibility Project at the Big River Industries' Gravelite Division, Erwinville, Pointe Coupee Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

**LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS**

- I. This permit is issued on the basis of the emissions reported in the application for approval of emissions and in no way guarantees that the design scheme presented will be capable of controlling the emissions to the type and quantities stated. Failure to install, properly operate and/or maintain all proposed control measures and/or equipment as specified in the application and supplemental information shall be considered a violation of the permit and LAC 33:III.501. If the emissions are determined to be greater than those allowed by the permit (e.g. during the shakedown period for new or modified equipment) or if proposed control measures and/or equipment are not installed or do not perform according to design efficiency, an application to modify the permit must be submitted. All terms and conditions of this permit shall remain in effect unless and until revised by the permitting authority.
- II. The permittee is subject to all applicable provisions of the Louisiana Air Quality Regulations. Violation of the terms and conditions of the permit constitutes a violation of these regulations.
- III. The Emission Rates for Criteria Pollutants, Emission Rates for TAP/HAP & Other Pollutants, and Specific Requirements sections or, where included, Emission Inventory Questionnaire sheets establish the emission limitations and are a part of the permit. Any operating limitations are noted in the Specific Requirements or, where included, Tables 2 and 3 of the permit. The synopsis is based on the application and Emission Inventory Questionnaire dated July 12, 2005, along with supplemental information dated February 01, 2006, February 16, March 20, April 03, April 19, April 21, April 24, April 26, and May 01, 2006.
- IV. This permit shall become invalid, for the sources not constructed, if:
 - A. Construction is not commenced, or binding agreements or contractual obligations to undertake a program of construction of the project are not entered into, within two (2) years (18 months for PSD permits) after issuance of this permit, or;
 - B. If construction is discontinued for a period of two (2) years (18 months for PSD permits) or more.

The administrative authority may extend this time period upon a satisfactory showing that an extension is justified.

This provision does not apply to the time period between construction of the approved phases of a phased construction project. However, each phase must commence construction within two (2) years (18 months for PSD permits) of its projected and approved commencement date.
- V. The permittee shall submit semiannual reports of progress outlining the status of construction, noting any design changes, modifications or alterations in the construction schedule which have or may have an effect on the emission rates or ambient air quality levels. These reports shall continue to be submitted until such time as construction is certified as being complete. Furthermore, for any significant change in the design, prior approval shall be obtained from the Office of Environmental Services, Air Permits Division.

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- VI. The permittee shall notify the Department of Environmental Quality, Office of Environmental Services, Air Permits Division within ten (10) calendar days from the date that construction is certified as complete and the estimated date of start-up of operation. The appropriate Regional Office shall also be so notified within the same time frame.
- VII. Any emissions testing performed for purposes of demonstrating compliance with the limitations set forth in paragraph III shall be conducted in accordance with the methods described in the Specific Conditions and, where included, Tables 1, 2, 3, 4, and 5 of this permit. Any deviation from or modification of the methods used for testing shall have prior approval from the Office of Environmental Assessment, Air Quality Assessment Division.
- VIII. The emission testing described in paragraph VII above, or established in the specific conditions of this permit, shall be conducted within sixty (60) days after achieving normal production rate or after the end of the shakedown period, but in no event later than 180 days after initial start-up (or restart-up after modification). The Office of Environmental Assessment, Air Quality Assessment Division shall be notified at least (30) days prior to testing and shall be given the opportunity to conduct a pretest meeting and observe the emission testing. The test results shall be submitted to the Air Quality Assessment Division within sixty (60) days after the complete testing. As required by LAC 33:III.913, the permittee shall provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits.
- IX. The permittee shall, within 180 days after start-up and shakedown of each project or unit, report to the Office of Environmental Compliance, Surveillance Division any significant difference in operating emission rates as compared to those limitations specified in paragraph III. This report shall also include, but not be limited to, malfunctions and upsets. A permit modification shall be submitted, if necessary, as required in Condition I.
- X. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of at least five (5) years.
- XI. If for any reason the permittee does not comply with, or will not be able to comply with, the emission limitations specified in this permit, the permittee shall provide the Office of Environmental Compliance, Surveillance Division with a written report as specified below.
- A. A written report shall be submitted within 7 days of any emission in excess of permit requirements by an amount greater than the Reportable Quantity established for that pollutant in LAC 33.I.Chapter 39.
 - B. A written report shall be submitted within 7 days of the initial occurrence of any emission in excess of permit requirements, regardless of the amount, where such emission occurs over a period of seven days or longer.
 - C. A written report shall be submitted quarterly to address all emission limitation exceedances not included in paragraphs A or B above. The schedule for submittal of

LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS

quarterly reports shall be no later than the dates specified below for any emission limitation exceedances occurring during the corresponding specified calendar quarter:

1. Report by June 30 to cover January through March
2. Report by September 30 to cover April through June
3. Report by December 31 to cover July through September
4. Report by March 31 to cover October through December

D. Each report submitted in accordance with this condition shall contain the following information:

1. Description of noncomplying emission(s);
2. Cause of noncompliance;
3. Anticipated time the noncompliance is expected to continue, or if corrected, the duration of the period of noncompliance;
4. Steps taken by the permittee to reduce and eliminate the noncomplying emissions; and
5. Steps taken by the permittee to prevent recurrences of the noncomplying emissions.

E. Any written report submitted in advance of the timeframes specified above, in accordance with an applicable regulation, may serve to meet the reporting requirements of this condition provided all information specified above is included. For Part 70 sources, reports submitted in accordance with Part 70 General Condition R shall serve to meet the requirements of this condition provided all specified information is included. Reporting under this condition does not relieve the permittee from the reporting requirements of any applicable regulation, including LAC 33.I.Chapter 39, LAC 33.III.Chapter 9, and LAC 33.III.5107.

XII. Permittee shall allow the authorized officers and employees of the Department of Environmental Quality, at all reasonable times and upon presentation of identification, to:

- A. Enter upon the permittee's premises where regulated facilities are located, regulated activities are conducted or where records required under this permit are kept;
- B. Have access to and copy any records that are required to be kept under the terms and conditions of this permit, the Louisiana Air Quality Regulations, or the Act;
- C. Inspect any facilities, equipment (including monitoring methods and an operation and maintenance inspection), or operations regulated under this permit; and
- D. Sample or monitor, for the purpose of assuring compliance with this permit or as otherwise authorized by the Act or regulations adopted thereunder, any substances or parameters at any location.

XIII. If samples are taken under Section XII.D. above, the officer or employee obtaining such samples shall give the owner, operator or agent in charge a receipt describing the sample obtained. If requested prior to leaving the premises, a portion of each sample equal in volume or weight to the portion retained shall be given to the owner, operator or agent in

**LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS**

charge. If an analysis is made of such samples, a copy of the analysis shall be furnished promptly to the owner, operator or agency in charge.

- XIV. The permittee shall allow authorized officers and employees of the Department of Environmental Quality, upon presentation of identification, to enter upon the permittee's premises to investigate potential or alleged violations of the Act or the rules and regulations adopted thereunder. In such investigations, the permittee shall be notified at the time entrance is requested of the nature of the suspected violation. Inspections under this subsection shall be limited to the aspects of alleged violations. However, this shall not in any way preclude prosecution of all violations found.
- XV. The permittee shall comply with the reporting requirements specified under LAC 33:III.919 as well as notification requirements specified under LAC 33:III.927.
- XVI. In the event of any change in ownership of the source described in this permit, the permittee and the succeeding owner shall notify the Office of Environmental Services, Air Permits Division, within ninety (90) days after the event, to amend this permit.
- XVII. Very small emissions to the air resulting from routine operations, that are predictable, expected, periodic, and quantifiable and that are submitted by the permitted facility and approved by the Air Permits Division are considered authorized discharges. Approved activities are noted in the General Condition XVII Activities List of this permit. To be approved as an authorized discharge, these very small releases must:
1. Generally be less than 5 TPY
 2. Be less than the minimum emission rate (MER)
 3. Be scheduled daily, weekly, monthly, etc., or
 4. Be necessary prior to plant startup or after shutdown [line or compressor pressuring/depressuring for example]

These releases are not included in the permit totals because they are small and will have an insignificant impact on air quality. This general condition does not authorize the maintenance of a nuisance, or a danger to public health and safety. The permitted facility must comply with all applicable requirements, including release reporting under LAC 33:I.3901.

- XVIII. Provisions of this permit may be appealed in writing pursuant to La. R.S. 30:2024(A) within 30 days from receipt of the permit. Only those provisions specifically appealed will be suspended by a request for hearing, unless the secretary or the assistant secretary elects to suspend other provisions as well. Construction cannot proceed except as specifically approved by the secretary or assistant secretary. A request for hearing must be sent to the following:

Attention: Office of the Secretary, Legal Services Division
La. Dept. of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302

- XIX. Certain Part 70 general conditions may duplicate or conflict with state general conditions. To the extent that any Part 70 conditions conflict with state general conditions, then the Part

LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS

70 general conditions control. To the extent that any Part 70 general conditions duplicate any state general conditions, then such state and Part 70 provisions will be enforced as if there is only one condition rather than two conditions.

TABLE I: BACT COST SUMMARY

Gravelite Division
Agency Interest No.: 1272
Big River Industries, Inc.
Erwinville, Pointe Coupee Parish, Louisiana
PSD-LA-713

Control Alternative for NO _x , emissions from the clay kilns	Availability/ Feasibility	Negative Impacts (a)	Control Efficiency	Emissions Reduction (TPY)	Annualized Cost (\$)	Cost Effectiveness (\$/Ton)	Notes
NO _x	Good Combustion and Maintenance Practices	Not Established	Not Established	-	-	-	Selected BACT, Existing.
	Selective Catalytic Reduction (SCR)	1 and 2	80%	200.5	\$5,417,135	\$27,017	Increased PM ₁₀ and NH ₃ . High cost effectiveness.
	Selective Non-Catalytic Reduction (SNCR)	(b)	40%-70%	-	-	-	Not technically feasible for clay kilns application.
	Low NO _x burner, combustion modifications, cyanuric acid injection	(b)	15% -30%	-	-	-	Not suitable for lightweight aggregates manufacturing application.
	Staging Combustion Air (firing coal/petroleum coke)	(b)	-	-	-	-	Has not been demonstrated for clay kilns on large scale.
	Combustion Operation Modifications	1	-	-	-	-	Has not been demonstrated for clay kilns.
	Combustion modifications and low NO _x	1	-	-	-	-	Has not been demonstrated for clay kilns.
Notes: a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety b) Technically infeasible, economic analysis was not performed							

TABLE I: BACT COST SUMMARY

Gravelite Division
Agency Interest No.: 1272
Big River Industries, Inc.
Erwinville, Pointe Coupee Parish, Louisiana
PSD-LA-713

Control Alternative for PM ₁₀ emissions from kilns, coolers, and fugitives	Availability/Feasibility	Negative Impacts (a)	Control Efficiency	Emissions Reduction (TPY)	Annualized Cost (\$)	Cost Effectiveness (\$/Ton)	Notes
Kilns	Venturi Wet Scrubber	NONE	99.6%	-	-	-	Selected. Existing and confirmed by June 2004 test.
	Baghouse	1	99.9%	12.69	\$74,508	\$6,029	Maintenance cost only.
Coolers	Multi-clones (cyclones)	Not Established	25%	-	-	-	Selected. Existing and confirmed by June 2004 test.
	Baghouse	1	99.9%	29.08	\$763,124	\$26,242	Using Air Compliance Advisor Version 7.5 EPA approved code.
	Electrostatic Precipitator	1	99%	-	\$682,780	\$24,350	Using Air Compliance Advisor Version 7.5 EPA approved code.
Fugitives	Water Spray/ partially enclosed conveyors/ Low Speed and Watering	1	-	-	-	-	Selected Existing control measures
Notes: a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety b) Technically infeasible, economic analysis was not performed							

TABLE II
AIR QUALITY ANALYSIS SUMMARY

Gravelite Division
Agency Interest No.: 1272
Big River Industries, Inc.
Erwinville, Pointe Coupee Parish, Louisiana
PSD-LA-713

Pollutant	Averaging Period	Preliminary Screening Conc. ($\mu\text{g}/\text{m}^3$)	Significant Monitoring Conc. ($\mu\text{g}/\text{m}^3$)	Current Monitored Conc. ($\mu\text{g}/\text{m}^3$)	Level of Significant Impact ($\mu\text{g}/\text{m}^3$)	Maximum Modeled Conc. ($\mu\text{g}/\text{m}^3$)	Modeled + Background Conc. ($\mu\text{g}/\text{m}^3$)	National Ambient Air Quality Standard ($\mu\text{g}/\text{m}^3$)	Modeled PSD Increment Consumption ($\mu\text{g}/\text{m}^3$)	Allowable Class II PSD Increment ($\mu\text{g}/\text{m}^3$)
Particulate	24-hour	28.6	10	NR	5	NR	143.4	150	26.7	30
	Annual	3.6	-	NR	1	NR	48.1	50	5.0	17
Nitrogen Dioxide	Annual	4.3	14	NR	1	NR	58.0	100	4.3	25
CO	1-hour	NR	-	NR	2,000	NR	NR	40,000	NR	-
	8-hour	NR	575	NR	500	NR	NR	10,000	NR	-
SO ₂	3-hour	NR	-	NR	25	NR	NR	1300	NR	512
	24-hour	NR	13	NR	5	NR	NR	365	NR	91
	Annual	NR	-	NR	1	NR	NR	80	NR	20
NR = Not Required										

General Information

AI ID: 1272 Gravelite Division
Activity Number: PER20050002
Permit Number: PSD-LA-713
Air - PSD Permit Initial

Also Known As:	ID	Name	User Group	Start Date
	2260-00002	Big River Industries	CDS Number	09-02-1990
	2260-0002	Big River Industries	Emission Inventory	03-03-2004
	72-0474298	Federal Tax ID	Federal Tax ID	11-20-1999
	LAD008155251	Big River Industries	Hazardous Waste Notification	07-31-1987
	LA0090387	LPDES #	LPDES Permit #	10-28-2004
	WP3756	WPC State Permit Number	LWDPS Permit #	06-25-2003
	22015	Big River Industrial Gravelite	TEMPO Merge	03-19-2001
	70729BGRVR12652	TRI #	Toxic Release Inventory	07-09-2004
	61-000703	UST Facility ID (from UST legacy data)	Underground Storage Tanks	10-12-2002

Physical Location:

12652 Hwy 190 W
Erwinville, LA 70729

Main Phone: 2256274255

Mailing Address:

PO Box 66377
Erwinville, LA 708966377

Location of Front Gate:

30° 31' 33" latitude, 91° 24' 23" longitude, Coordinate Method: Interpolation - Map, Coordinate Datum: NAD27

Related People:

Name	Mailing Address	Phone (Type)	Relationship
Betty Beard	231 N Liberty St Opelousas, LA 70570	3379489888 (WP)	Water Permit Contact For
Brian Dowden	12652 Hwy 190 W Erwinville, LA 70729	2256274242 (WP)	Employed by
Greg Knight	PO Box 66377 Baton Rouge, LA 708966377	2256274242 (WP)	Responsible Official for
Steve McLeod	PO Box 66377 Baton Rouge, LA 708966377	2256274242 (WP)	Air Permit Contact For

Related Organizations:

Name	Address	Phone (Type)	Relationship
Big River Industries Inc	PO Box 66377 Baton Rouge, LA 708966377		Air Billing Party for
Big River Industries Inc	PO Box 66377 Baton Rouge, LA 708966377		Water Billing Party for
Big River Industries Inc	PO Box 66377 Baton Rouge, LA 708966377		Operates
Oldcastle APG Inc	231 N Liberty St Opelousas, LA 70570	3379489888 (WP)	Owns

SIC Codes:

3295, Minerals and earths, ground or otherwise treated

Note: This report entitled "General Information" contains a summary of facility-level information contained in LDEQ's TEMPO database for this facility and is not considered a part of the permit. Please review the information contained in this document for accuracy and completeness. If any changes are required or if you have questions regarding this document, you may contact Mr. David Ferrand, Environmental Assistance Division, at (225) 219-3247 or email your changes to facupdate@la.gov.

INVENTORIES

AI ID: 1272 - Gravelite Division
Activity Number: PER20050002
Permit Number: PSD-LA-713
Air - PSD Permit Initial

Subject Item Inventory:

ID	Description	Tank Volume	Max. Operating Rate	Normal Operating Rate	Contents	Operating Time
EQT003	EPN 003 No. 3 Rotary Kiln		22 tons/hr	22 tons/hr		8760 hr/yr (All Year)
EQT004	EPN 004 No. 4 Rotary Kiln		22 tons/hr	22 tons/hr		8760 hr/yr (All Year)
EQT005	EPN 005a No. 1 Cooler		22 tons/hr	22 tons/hr	Clay	8760 hr/yr (All Year)
EQT006	EPN 006a No. 2 Cooler		22 tons/hr	22 tons/hr	Clay	8760 hr/yr (All Year)
EQT007	EPN 007a No. 3 Cooler		22 tons/hr	22 tons/hr	Clay	8760 hr/yr (All Year)
EQT008	EPN 008a No. 4 Cooler		22 tons/hr	22 tons/hr	Clay	8760 hr/yr (All Year)
EQT009	EPN 015 East Truck and Rail Loadout (Fugitives)		40 tons/hr	40 tons/hr	Light Aggregate	8760 hr/yr (All Year)
EQT010	EPN 016 West Truck and Rail Loadout (Fugitives)		40 tons/hr	40 tons/hr	Light Aggregate	8760 hr/yr (All Year)
EQT014	EPN 001 No. 1 Rotary Kiln		22 tons/hr	22 tons/hr		8760 hr/yr (All Year)
EQT015	EPN 002 No. 2 Rotary Kiln		22 tons/hr	22 tons/hr		8760 hr/yr (All Year)
FUG001	EPN 009 Scalping Screen (Fugitives)		40 tons/hr	40 tons/hr	Clay	8760 hr/yr (All Year)
FUG002	EPN 010 Primary Crusher (Fugitives)		40 tons/hr	40 tons/hr	Clay	8760 hr/yr (All Year)
FUG003	EPN 011 North Screen (Fugitives)		40 tons/hr	40 tons/hr	Clay	8760 hr/yr (All Year)
FUG004	EPN 012 South Screen (Fugitives)		40 tons/hr	40 tons/hr	Clay	8760 hr/yr (All Year)
FUG005	EPN 013 No. 1 Crusher (Fugitives)		40 tons/hr	40 tons/hr	Clay	8760 hr/yr (All Year)
FUG007	EPN 017a General Conveyor Systems & Stockpiles (Fugitives)		40 tons/hr	40 tons/hr	Clay	8760 hr/yr (All Year)
FUG008	EPN 017b Night Stock Pile Conveyor System		40 tons/hr	40 tons/hr	Clay	8760 hr/yr (All Year)
FUG009	EPN 018 Double Deck Clean-up Screen (Fugitives)		40 tons/hr	40 tons/hr	Clay	8760 hr/yr (All Year)
FUG010	EPN 005b No. 1 Cooler Fugitives				Clay	8760 hr/yr (All Year)
FUG011	EPN 006b No. 2 Cooler Fugitives				Clay	8760 hr/yr (All Year)
FUG012	EPN 007b No. 3 Cooler Fugitives				Clay	8760 hr/yr (All Year)
FUG013	EPN 008b No. 4 Cooler Fugitives				Clay	8760 hr/yr (All Year)
FUG014	EPN 022 Unpaved Road Fugitives				Road dust	8760 hr/yr (All Year)
FUG015	EPN 023 Clinker Crushing and Handling				Road dust	8760 hr/yr (All Year)

Subject Item Groups:

ID	Description	Included Components (from Above)			
GRP004	Affected Emission Sources	EQT3	EPN 003	No. 3 Rotary Kiln	
GRP004	Affected Emission Sources	EQT4	EPN 004	No. 4 Rotary Kiln	
GRP004	Affected Emission Sources	EQT5	EPN 005a	No. 1 Cooler	
GRP004	Affected Emission Sources	EQT6	EPN 006a	No. 2 Cooler	
GRP004	Affected Emission Sources	EQT7	EPN 007a	No. 3 Cooler	
GRP004	Affected Emission Sources	EQT8	EPN 008a	No. 4 Cooler	
GRP004	Affected Emission Sources	EQT9	EPN 015	East Truck and Rail Loadout (Fugitives)	
GRP004	Affected Emission Sources	EQT10	EPN 016	West Truck and Rail Loadout (Fugitives)	
GRP004	Affected Emission Sources	EQT14	EPN 001	No. 1 Rotary Kiln	

INVENTORIES

AI ID: 1272 - Gravelite Division
Activity Number: PER20050002
Permit Number: PSD-LA-713
Air - PSD Permit Initial

Subject Item Groups:

ID	Description	Included Components (from Above)
GRP004	Affected Emission Sources	EQT15 EPN 002 No. 2 Rotary Kiln
GRP004	Affected Emission Sources	FUG1 EPN 009 Scalping Screen (Fugitives)
GRP004	Affected Emission Sources	FUG2 EPN 010 Primary Crusher (Fugitives)
GRP004	Affected Emission Sources	FUG3 EPN 011 North Screen (Fugitives)
GRP004	Affected Emission Sources	FUG4 EPN 012 South Screen (Fugitives)
GRP004	Affected Emission Sources	FUG5 EPN 013 No. 1 Crusher (Fugitives)
GRP004	Affected Emission Sources	FUG7 EPN 017a General Conveyor Systems & Stockpiles (Fugitives)
GRP004	Affected Emission Sources	FUG8 EPN 017b Night Stock Pile Conveyor System
GRP004	Affected Emission Sources	FUG9 EPN 018 Double Deck Clean-up Screen (Fugitives)
GRP004	Affected Emission Sources	FUG10 EPN 005b No. 1 Cooler Fugitives
GRP004	Affected Emission Sources	FUG11 EPN 006b No. 2 Cooler Fugitives
GRP004	Affected Emission Sources	FUG12 EPN 007b No. 3 Cooler Fugitives
GRP004	Affected Emission Sources	FUG13 EPN 008b No. 4 Cooler Fugitives
GRP004	Affected Emission Sources	FUG14 EPN 022 Unpaved Road Fugitives
GRP004	Affected Emission Sources	FUG15 EPN 023 Clinker Crushing and Handling

Relationships:

Stack Information:

ID	Velocity (ft/sec)	Flow Rate (cubic ft/min-actual)	Diameter (feet)	Discharge Area (square feet)	Height (feet)	Temperature (oF)
EQT003 EPN 003 No. 3 Rotary Kiln	45.25	34118	4		75	177
EQT004 EPN 004 No. 4 Rotary Kiln	45.25	34118	4		75	177
EQT005 EPN 005a No. 1 Cooler	26.8	29130	4.8		38	125
EQT006 EPN 006a No. 2 Cooler	26.8	29130	4.8		38	125
EQT007 EPN 007a No. 3 Cooler	26.8	29130	4.8		38	125
EQT008 EPN 008a No. 4 Cooler	26.8	29130	4.8		38	125
EQT014 EPN 001 No. 1 Rotary Kiln	45.25	34118	4		75	177
EQT015 EPN 002 No. 2 Rotary Kiln	45.25	34118	4		75	177
FUG001 EPN 009 Scalping Screen (Fugitives)					25	
FUG002 EPN 010 Primary Crusher (Fugitives)					15	
FUG003 EPN 011 North Screen (Fugitives)					40	
FUG004 EPN 012 South Screen (Fugitives)					40	
FUG005 EPN 013 No. 1 Crusher (Fugitives)					20	
FUG007 EPN 017a General Conveyor Systems & Stockpiles (Fugitives)						
FUG008 EPN 017b Night Stock Pile Conveyor System						
FUG009 EPN 018 Double Deck Clean-up Screen (Fugitives)						
FUG010 EPN 005b No. 1 Cooler Fugitives						
FUG011 EPN 006b No. 2 Cooler Fugitives						
FUG012 EPN 007b No. 3 Cooler Fugitives						

INVENTORIES

AI ID: 1272 - Gravelite Division
Activity Number: PER20050002
Permit Number: PSD-LA-713
Air - PSD Permit Initial

Stack Information:

ID	Velocity (ft/sec)	Flow Rate (cubic ft/min-actual)	Diameter (feet)	Discharge Area (square feet)	Height (feet)	Temperature (oF)
FUG013	EPN 008b	No. 4 Cooler Fugitives				
FUG014	EPN 022	Unpaved Road Fugitives				
FUG015	EPN 023	Clinker Crushing and Handling				

Fee Information:

Subj Item Id	Multiplier	Units Of Measure	Fee Desc
GRP004	4		0860 - Clay Kiln
	580		0815 - Concrete Products

EMISSION RATES FOR CRITERIA POLLUTANTS

AI ID: 1272 - Gravelite Division
 Activity Number: PER20050002
 Permit Number: PSD-LA-713
 Air - PSD Permit Initial

All phases

Subject Item	PM ₁₀			NOx		
	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year
EQT 003	0.97	0.97	4.23	57.22	57.22	250.64
EPN 003						
EQT 004	0.97	0.97	4.23	57.22	57.22	250.64
EPN 004						
EQT 005	1.67	1.67	7.30			
EPN 005a						
EQT 006	1.67	1.67	7.30			
EPN 006a						
EQT 007	1.67	1.67	7.30			
EPN 007a						
EQT 008	1.67	1.67	7.30			
EPN 008a						
EQT 009	0.01	0.01	0.05			
EPN 015						
EQT 010	0.01	0.01	0.05			
EPN 016						
EQT 014	0.97	0.97	4.23	57.22	57.22	250.64
EPN 001						
EQT 015	0.97	0.97	4.23	57.22	57.22	250.64
EPN 002						
FUG 001	0.07	0.07	0.33			
EPN 009						
FUG 002	0.01	0.01	0.05			
EPN 010						
FUG 003	0.06	0.06	0.26			
EPN 011						
FUG 004	0.06	0.06	0.26			
EPN 012						
FUG 005	0.01	0.01	0.04			
EPN 013						
FUG 007	0.10	0.10	0.43			
EPN 017a						
FUG 008	0.04	0.04	0.17			
EPN 017b						
FUG 009	0.36	0.36	1.56			
EPN 018						

EMISSION RATES FOR CRITERIA POLLUTANTS

AI ID: 1272 - Gravelite Division
 Activity Number: PER20050002
 Permit Number: PSD-LA-713
 Air - PSD Permit Initial

All phases

Subject Item	PM ₁₀		NOx	
	Avg lb/hr	Max lb/hr	Tons/Year	Tons/Year
FUG 010	0.02	0.02	0.08	
EPN 0059				
FUG 011	0.02	0.02	0.08	
EPN 0066				
FUG 012	0.02	0.02	0.08	
EPN 0076				
FUG 013	0.02	0.02	0.08	
EPN 0086				
FUG 014	0.70	0.70	3.05	
EPN 022				
FUG 015	< 0.01	< 0.01	0.01	
EPN 023				

Note: Emission rates in bold are from alternate scenarios and are not included in permitted totals

Permit Phase Totals:

PM10: 52.70 tons/yr
 NOx: 1002.56 tons/yr

Emission rates Notes:

SPECIFIC REQUIREMENTS

AI ID: 1272 - Gravelite Division

Activity Number: PER20050002

Permit Number: PSD-LA-713

Air - PSD Permit Initial

EQT003 EPN 003 No. 3 Rotary Kiln

- 1 Water Flow rate monitored by flow rate monitoring device once every four hours. [LAC 33:III.509]
Which Months: All Year Statistical Basis: None specified
- 2 Venturi wet scrubber: Particulate matter (10 microns or less) \geq 99.6 % removal efficiency as determined in accordance with a performance test using test method approved by LDEQ. Compliance with this limitation is shown by operating the Venturi scrubber within the range of the operating parameter (water flow rate) established by the corresponding performance test. [LAC 33:III.509]
Which Months: All Year Statistical Basis: None specified
- 3 Water Flow rate recordkeeping by electronic or hard copy once every four hours. Keep Records on site for five years and available to a representative of DEQ or the U.S. EPA on request. [LAC 33:III.509]
- 4 Conduct a performance test: Due within 180 days after initial startup (or restart-up after modification), or within 60 days after achieving normal production rate or end of the shutdown period, whichever is earliest. The test's purpose is to demonstrate compliance with the emissions limits and/or the Venturi scrubber's PM10 removal efficiency of at least 99.6%.

Establish the minimum venturi scrubber water flow rate value or range (surrogate operating parameter) which ensures continuous compliance with the above stated venturi scrubber's PM10 removal efficiency.

Modify the permit to incorporate the established scrubbing water flow rate value or range. [LAC 33:III.509]

EQT004 EPN 004 No. 4 Rotary Kiln

- 5 Water Flow rate monitored by flow rate monitoring device once every four hours. [LAC 33:III.509]
Which Months: All Year Statistical Basis: None specified
- 6 Venturi wet scrubber: Particulate matter (10 microns or less) \geq 99.6 % removal efficiency as determined in accordance with a performance test using test method approved by LDEQ. Compliance with this limitation is shown by operating the Venturi scrubber within the range of the operating parameter (water flow rate) established by the corresponding performance test. [LAC 33:III.509]
Which Months: All Year Statistical Basis: None specified
- 7 Water Flow rate recordkeeping by electronic or hard copy once every four hours. Keep Records on site for five years and available to a representative of DEQ or the U.S. EPA on request. [LAC 33:III.509]
- 8 Conduct a performance test: Due within 180 days after initial startup (or restart-up after modification), or within 60 days after achieving normal production rate or end of the shutdown period, whichever is earliest. The test's purpose is to demonstrate compliance with the emissions limits and/or the Venturi scrubber's PM10 removal efficiency of at least 99.6%.

Establish the minimum venturi scrubber water flow rate value or range (surrogate operating parameter) which ensures continuous compliance with the above stated venturi scrubber's PM10 removal efficiency.

Modify the permit to incorporate the established scrubbing water flow rate value or range. [LAC 33:III.509]

EQT005 EPN 005a No. 1 Cooler

SPECIFIC REQUIREMENTS

AI ID: 1272 - Gravelite Division
Activity Number: PER20050002
Permit Number: PSD-LA-713
Air - PSD Permit Initial

EQT005 EPN 005a No. 1 Cooler

- 9 Conduct a stack emissions test: Due within 180 days after initial startup (or restart-up after modification), or within 60 days after achieving normal production rate or end of the shutdown period, whichever is earliest. The stack test's purpose is to demonstrate compliance with the emission limit of this permit. Test methods and procedures shall be in accordance with New Source Performance Standards, 40 CFR 60, Appendix A, Method 5 - Determination of Particulate Matter (PM10) Emissions from Stationary Sources. Use alternate stack test methods only with the prior approval of the Office of Environmental Assessment, Environmental Technology Division, Engineering Services. As required by LAC 33:III.913, provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits. [LAC 33:III.509]

EQT006 EPN 006a No. 2 Cooler

- 10 Conduct a stack emissions test: Due within 180 days after initial startup (or restart-up after modification), or within 60 days after achieving normal production rate or end of the shutdown period, whichever is earliest. The stack test's purpose is to demonstrate compliance with the emission limit of this permit. Test methods and procedures shall be in accordance with New Source Performance Standards, 40 CFR 60, Appendix A, Method 5 - Determination of Particulate Matter (PM10) Emissions from Stationary Sources. Use alternate stack test methods only with the prior approval of the Office of Environmental Assessment, Environmental Technology Division, Engineering Services. As required by LAC 33:III.913, provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits. [LAC 33:III.509]

EQT007 EPN 007a No. 3 Cooler

- 11 Conduct a stack emissions test: Due within 180 days after initial startup (or restart-up after modification), or within 60 days after achieving normal production rate or end of the shutdown period, whichever is earliest. The stack test's purpose is to demonstrate compliance with the emission limit of this permit. Test methods and procedures shall be in accordance with New Source Performance Standards, 40 CFR 60, Appendix A, Method 5 - Determination of Particulate Matter (PM10) Emissions from Stationary Sources. Use alternate stack test methods only with the prior approval of the Office of Environmental Assessment, Environmental Technology Division, Engineering Services. As required by LAC 33:III.913, provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits. [LAC 33:III.509]

EQT008 EPN 008a No. 4 Cooler

- 12 Conduct a stack emissions test: Due within 180 days after initial startup (or restart-up after modification), or within 60 days after achieving normal production rate or end of the shutdown period, whichever is earliest. The stack test's purpose is to demonstrate compliance with the emission limit of this permit. Test methods and procedures shall be in accordance with New Source Performance Standards, 40 CFR 60, Appendix A, Method 5 - Determination of Particulate Matter (PM10) Emissions from Stationary Sources. Use alternate stack test methods only with the prior approval of the Office of Environmental Assessment, Environmental Technology Division, Engineering Services. As required by LAC 33:III.913, provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits. [LAC 33:III.509]

EQT014 EPN 001 No. 1 Rotary Kiln

- 13 Water Flow rate monitored by flow rate monitoring device once every four hours. [LAC 33:III.509]
Which Months: All Year Statistical Basis: None specified

SPECIFIC REQUIREMENTS

AI ID: 1272 - Gravelite Division
Activity Number: PER20050002
Permit Number: PSD-LA-713
Air - PSD Permit Initial

EQT014 EPN 001 No. 1 Rotary Kiln

- 14 Venturi wet scrubber: Particulate matter (10 microns or less) $\geq 99.6\%$ removal efficiency as determined in accordance with a performance test using test method approved by LDEQ. Compliance with this limitation is shown by operating the Venturi scrubber within the range of the operating parameter (water flow rate) established by the corresponding performance test. [LAC 33:III.509]
Which Months: All Year Statistical Basis: None specified
- 15 Water Flow rate recordkeeping by electronic or hard copy once every four hours. Keep Records on site for five years and available to a representative of DEQ or the U.S. EPA on request. [LAC 33:III.509]
- 16 Conduct a performance test: Due within 180 days after initial startup (or restart-up after modification), or within 60 days after achieving normal production rate or end of the shutdown period, whichever is earliest. The test's purpose is to demonstrate compliance with the emissions limits and/or the Venturi scrubber's PM10 removal efficiency of at least 99.6%.
- Establish the minimum venturi scrubber water flow rate value or range (surrogate operating parameter) which ensures continuous compliance with the above stated venturi scrubber's PM10 removal efficiency.
- Modify the permit to incorporate the established scrubbing water flow rate value or range. [LAC 33:III.509]

EQT015 EPN 002 No. 2 Rotary Kiln

- 17 Water Flow rate monitored by flow rate monitoring device once every four hours. [LAC 33:III.509]
Which Months: All Year Statistical Basis: None specified
- 18 Venturi wet scrubber: Particulate matter (10 microns or less) $\geq 99.6\%$ removal efficiency as determined in accordance with a performance test using test method approved by LDEQ. Compliance with this limitation is shown by operating the Venturi scrubber within the range of the operating parameter (water flow rate) established by the corresponding performance test. [LAC 33:III.509]
Which Months: All Year Statistical Basis: None specified
- 19 Water Flow rate recordkeeping by electronic or hard copy once every four hours. Keep Records on site for five years and available to a representative of DEQ or the U.S. EPA on request. [LAC 33:III.509]
- 20 Conduct a performance test: Due within 180 days after initial startup (or restart-up after modification), or within 60 days after achieving normal production rate or end of the shutdown period, whichever is earliest. The test's purpose is to demonstrate compliance with the emissions limits and/or the Venturi scrubber's PM10 removal efficiency of at least 99.6%.
- Establish the minimum venturi scrubber water flow rate value or range (surrogate operating parameter) which ensures continuous compliance with the above stated venturi scrubber's PM10 removal efficiency.
- Modify the permit to incorporate the established scrubbing water flow rate value or range. [LAC 33:III.509]

FUG001 EPN 009 Scalping Screen (Fugitives)

- 21 Particulate matter (10 microns or less): Permittee shall install and/or maintain in proper working conditions a water spray system and/or partially enclosed conveyors to reduce PM10 emissions by at least 90.0%. [LAC 33:III.509]

FUG002 EPN 010 Primary Crusher (Fugitives)

SPECIFIC REQUIREMENTS

AI ID: 1272 - Gravelite Division
Activity Number: PER20050002
Permit Number: PSD-LA-713
Air - PSD Permit Initial

FUG002 EPN 010 Primary Crusher (Fugitives)

22 Particulate matter (10 microns or less): Permittee shall install and/or maintain in proper working conditions a water spray system and/or partially enclosed conveyors to reduce PM10 emissions by at least 90.0%. [LAC 33:III.509]

FUG003 EPN 011 North Screen (Fugitives)

23 Particulate matter (10 microns or less): Permittee shall install and/or maintain in proper working conditions a water spray system and/or partially enclosed conveyors to reduce PM10 emissions by at least 90.0%. [LAC 33:III.509]

FUG004 EPN 012 South Screen (Fugitives)

24 Particulate matter (10 microns or less): Permittee shall install and/or maintain in proper working conditions a water spray system and/or partially enclosed conveyors to reduce PM10 emissions by at least 90.0%. [LAC 33:III.509]

FUG005 EPN 013 No. 1 Crusher (Fugitives)

25 Particulate matter (10 microns or less): Permittee shall install and/or maintain in proper working conditions a water spray system and/or partially enclosed conveyors to reduce PM10 emissions by at least 90.0%. [LAC 33:III.509]

FUG007 EPN 017a General Conveyor Systems & Stockpiles (Fugitives)

26 Particulate matter (10 microns or less): Permittee shall install and/or maintain in proper working conditions a water spray system and/or partially enclosed conveyors to reduce PM10 emissions by at least 90.0%. [LAC 33:III.509]

FUG008 EPN 017b Night Stock Pile Conveyor System

27 Particulate matter (10 microns or less): Permittee shall install and/or maintain in proper working conditions a water spray system and/or partially enclosed conveyors to reduce PM10 emissions by at least 90.0%. [LAC 33:III.509]

FUG014 EPN 022 Unpaved Road Fugitives

28 Particulate matter (10 microns or less): Permittee shall enforce a low speed limit and water the unpaved roads to reduce PM10 emissions by at least 95.5%. [LAC 33:III.509]

GRP004 Affected Emission Sources

- 29 Nitrogen oxides \leq 1002.56 tons/yr. [LAC 33:III.509]
Which Months: All Year Statistical Basis: Annual maximum
- 30 Particulate matter (10 microns or less) \leq 52.70 tons/yr. [LAC 33:III.509]
Which Months: All Year Statistical Basis: Annual maximum